

Strand 4: Data Analysis/Probability (Data Analysis, Probability, and Statistics)

Rationale

With society's expanding use of data for prediction and decision-making, it is important that students develop an understanding of the concepts and processes used in analyzing data.

Purpose of the Inventory

The purpose of the Data Analysis/Probability strand of this inventory is to assist teachers in evaluating a student's understanding of data analysis. Students should be able to recognize, identify, construct, and describe graphs. The students should also be able to predict outcomes when given information.

Inventory Administration

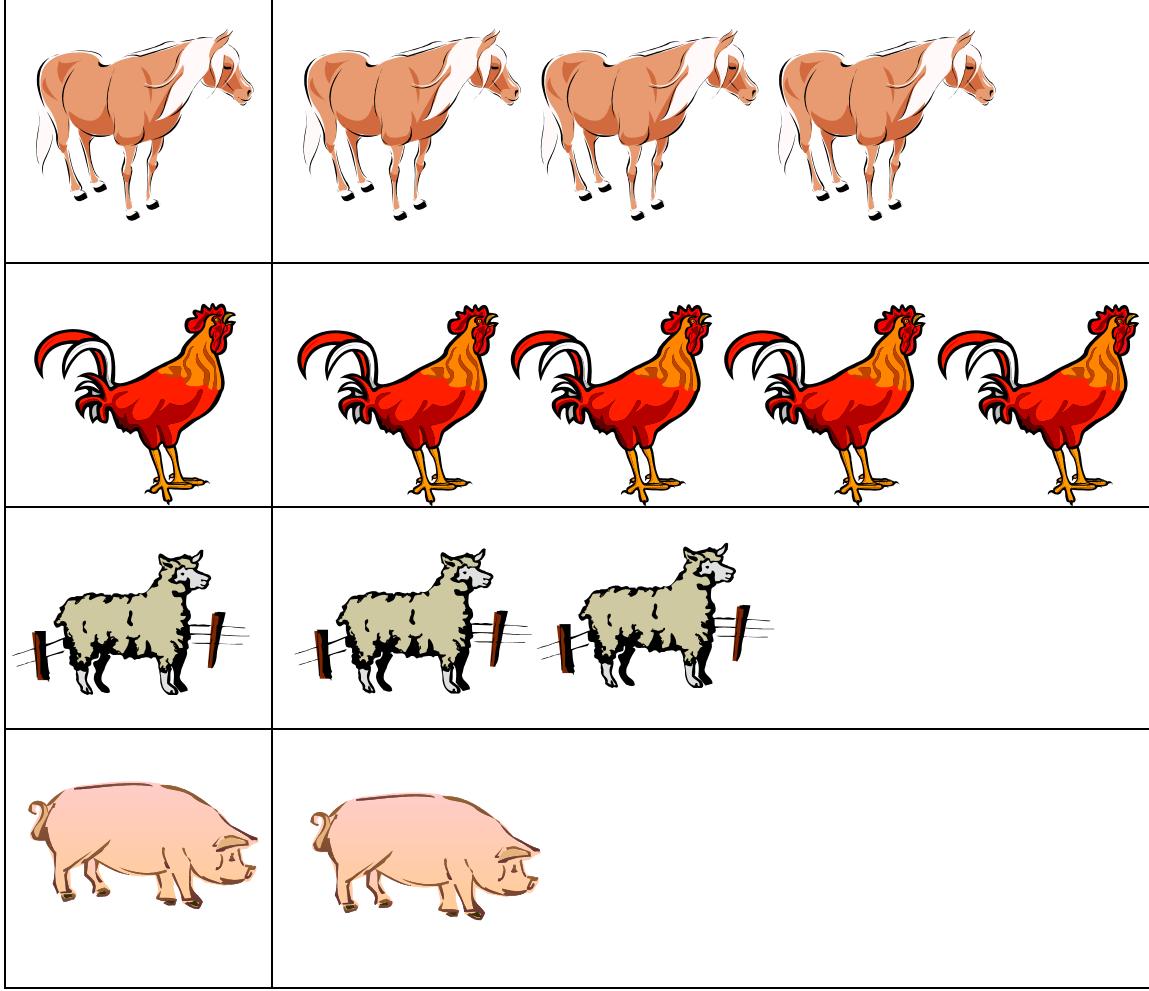
This inventory is to be administered to students individually by the classroom teacher. Teachers will complete the student checklist while administering the Inventory.

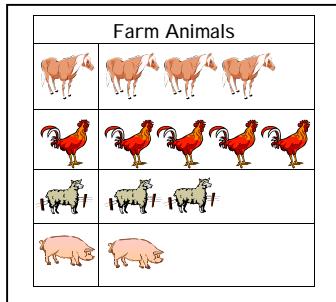
Manipulatives and Inventory Items

These manipulatives are included in the kit and will be used during administration of this inventory:

Unifix cubes	Spinner	Canvas bag	Blank side of the hundreds chart
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Farm Animals





The teacher points to the graph and says,
This is a graph about the animals found on a farm.

1. Which farm animal is shown the most?

(Answer: Student points to or says "Rooster" or "Chicken".)

2. Which farm animal is shown the least?

(Answer: Student points to or says "Pig".)

3. Are any of the farm animals shown the same number of times?

(Answer: No)

Kindergarten Standard 262.01: Understand data analysis.

- Interpret information from real objects and simple pictographs.
- Understand and use appropriate vocabulary.

DAP 2

Blank
page

Manipulatives

- Unifix cubes
- Canvas bag

Teacher shows the student 7 Unifix cubes of one color and 1 of another color. Teacher puts all the cubes in the canvas bag. Teacher reaches into the bag and removes one cube being careful not to allow the student to see the color of the cube. (Avoid using favorite colors such as red or blue.)

The teacher asks,

1. **What color of cube do you think I have in my hand?**

(Answer: The color that was used for the 7 cubes.)

2. **Why do you think so?**

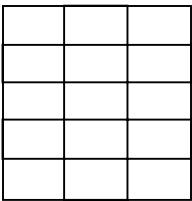
(Answer: Accept reasonable answer. Example: "Most of the cubes were that color.")

Kindergarten Standard 262.03: Understand basic concepts of probability.

a. Predict and perform results of simple probability experiments.

Kindergarten Standard 262.04: Make predictions or decisions based on data.

a. Make predictions or decisions based on probable results or past experiences.



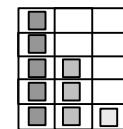
Manipulatives

- 5 Unifix cubes of one color
- 3 Unifix cubes of a second color
- 1 Unifix cube of a third color

Teacher shows student the graph and gives student the cubes.

Teacher says,

Use these cubes to make a graph showing the number of cubes you have of each color.



(Answer: Child places cubes on graph.) Example:

After the student completes the graphing task, teacher says,

Tell me about this graph.

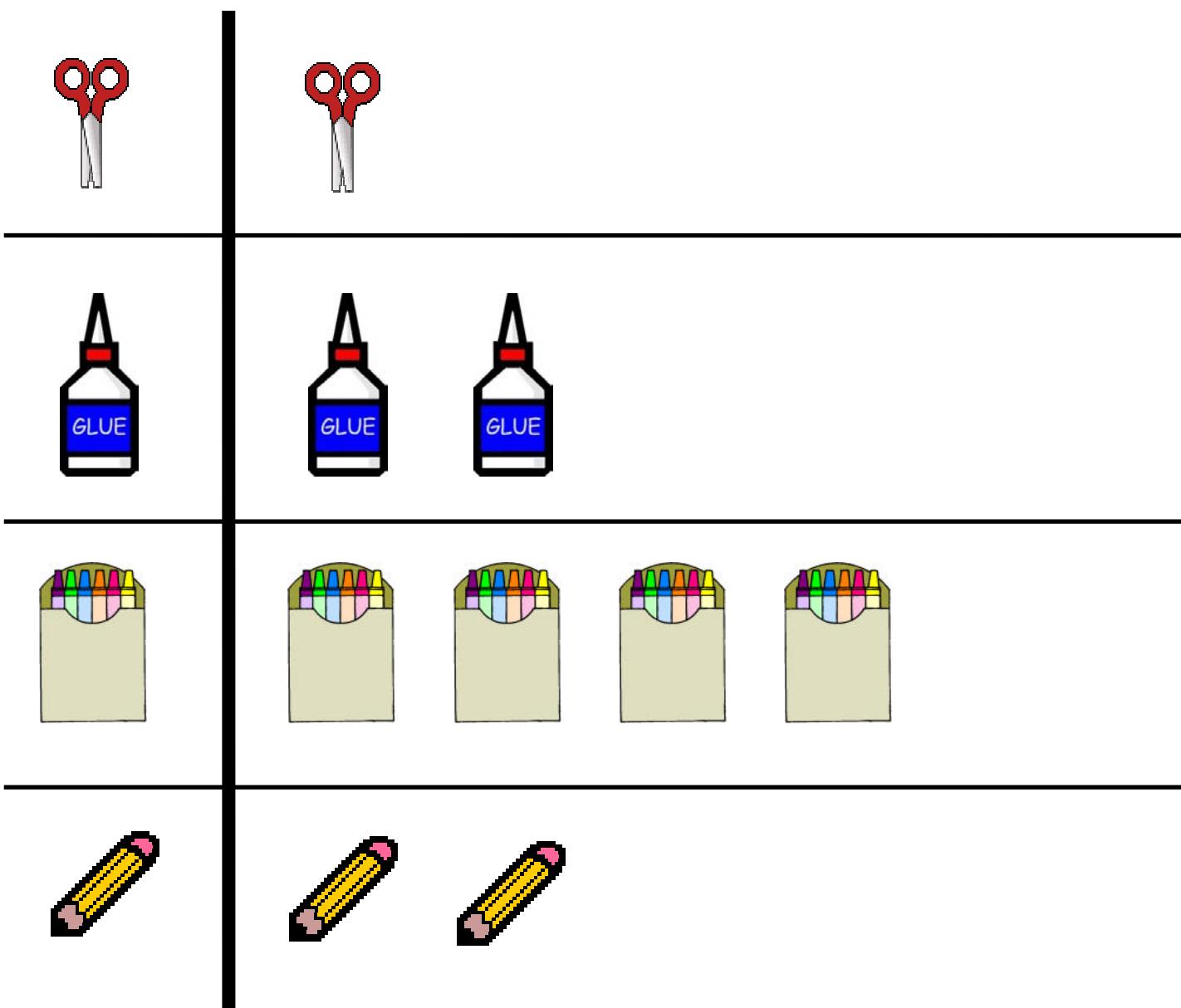
(Answer: any relevant information about the graph, i.e. there is one blue, there are more red, there are fewer green, etc.)

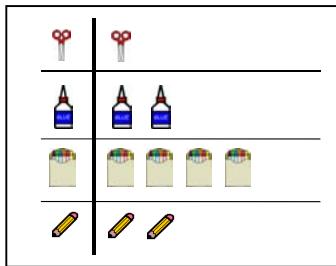
Kindergarten Standard 258.02: Use reasoning skills to recognize problems and express them mathematically.

a. Use concrete objects to identify and show a solution to problems.

Kindergarten Standard 262.01: Understand data analysis.

a. Interpret information from real objects and simple graphs.





Manipulatives

- None

The teacher will point to graph on student page and ask,

1. Which school item is shown the most?

(Answer: crayons)

2. Which school item is shown the least?

(Answer: scissors)

3. Do any of the rows have the same amount?

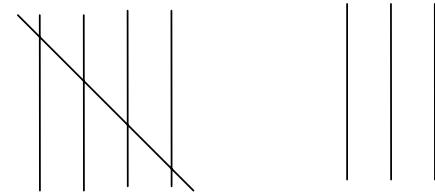
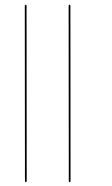
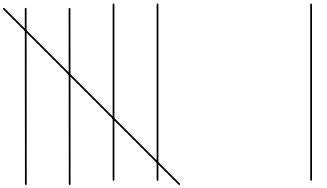
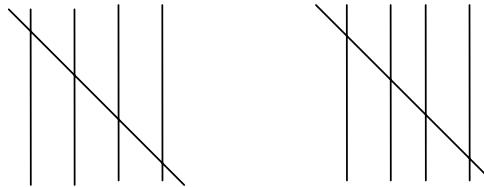
(Answer: glue and pencils)

4. How many more boxes of crayons are there than scissors?

(Answer: 3)

1st Grade Standards 262.01: Understand data analysis.

a. Interpret information from real objects and simple pictographs.



Manipulatives

- None

Teacher says,

This is a chart about how students get to school.

Look at the tally marks on the chart.

1. Which way do most students get to school?

(Answer: Student says "bus".)

2. Which way do the least number of students get to school?

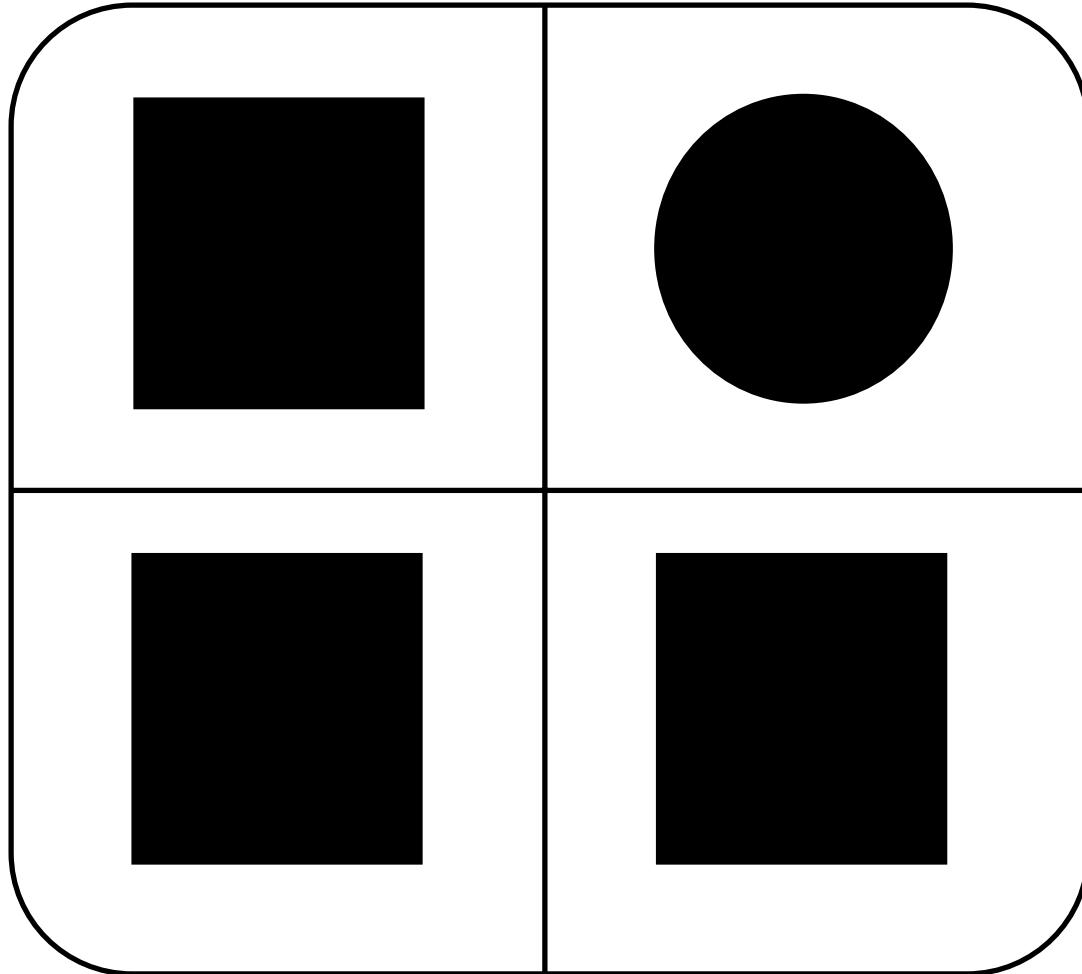
(Answer: Student says "bike".)

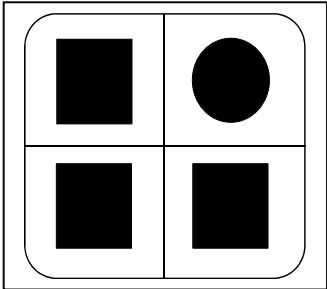
3. How many students walk to school?

(Answer: Student says "eight".)

1st Grade Standard 272.01: Understand data analysis.

a. Interpret information found in simple graphs to answer questions.





Manipulatives

- Spinner

Teacher places the clear spinner over the picture on the student page. Teacher says,

1. If we spin the spinner 10 times, which shape do you think that the spinner will land on the most?

(Answer: Most often the spinner land on the square.)

2. Tell me why you think so?

(Answer: Accept reasonable answer. Example: There are 3 squares and only one circle.)

1st Grade Standards 262.03: Understand basic concepts of probability.

a. Predict, perform, and record results of simple probability experiments.

Blank page

Manipulatives

- Unifix cubes
- Blank hundreds chart
- Canvas bag

Provide the student with a blank hundreds chart grid and canvas bag with 20 Unifix cubes of five different colors. Teacher places 5 cubes of different colors at the bottom of the grid for the student. Student will pick **10 Unifix** cubes out of the bag and create a graph to show the colors they get. (If the student picks red, he/she would place it above the red Unifix cube on the graph.) When the student finishes the graph, the teacher will ask,

1. Which column/row has the most cubes?
2. Which column/row has the least cubes?
3. Are there any of the columns/rows with the same number of cubes?
4. Which ones?
5. Will your graph always be the same each time you do this activity?
6. Why? (Accept reasonable answers.)

2nd Grade Standards 282.01: Understand data analysis.

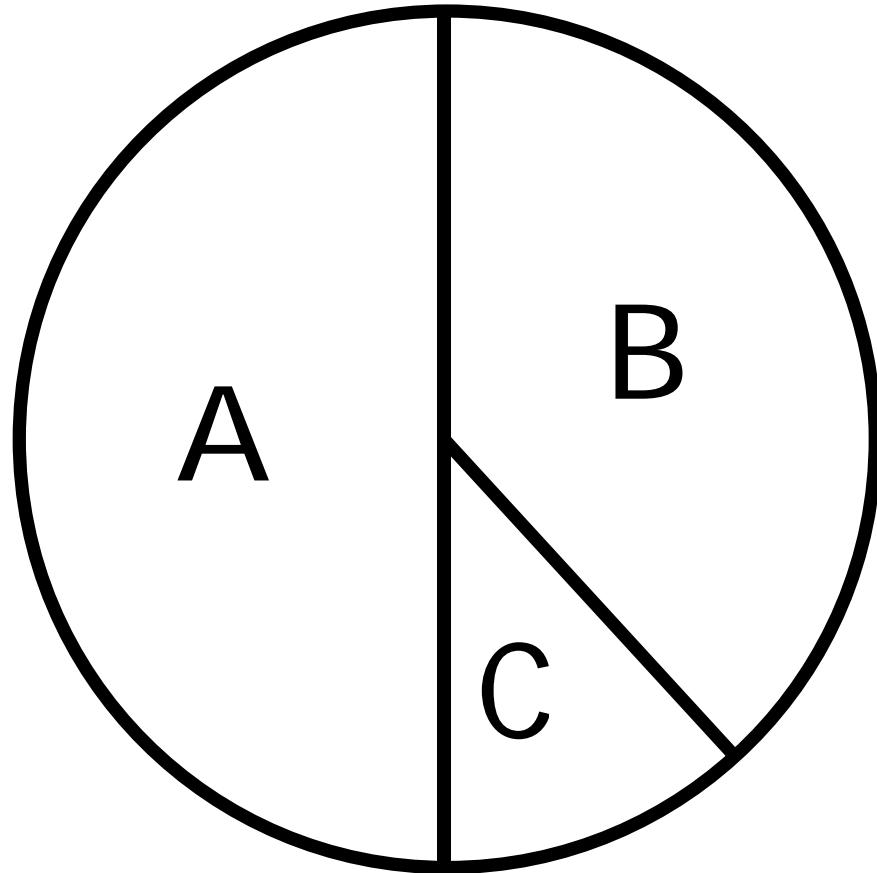
- a. Interpret information found in simple tables, charts, and graphs.
- b. Understand and use appropriate vocabulary.

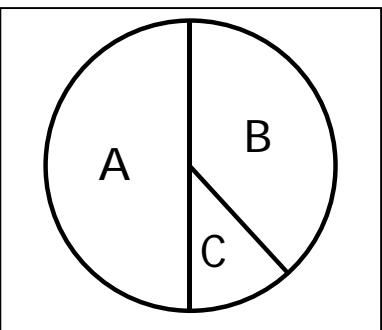
2nd Grade Standards 282.02: Collect, organize, and display data.

- a. Gather and display data in tables, charts, and graphs in order to answer a question.

2nd Grade Standards 278.04: Communicate results using appropriate terminology and methods.

- a. Use a variety of methods to communicate mathematical information.





Manipulatives

- Spinner

The teacher will place the clear spinner over the graphic on the student page and ask,

1. If we spin the spinner 10 times, which part do you think the spinner will probably land on the least – part A, part B, or part C? (Answer: C)

2. Why? (Answer: Accept reasonable answer. Example: The space to land on C is smaller than the space to land on A or B.)

3. If we spin the spinner 10 times, how many times should it land on part A?

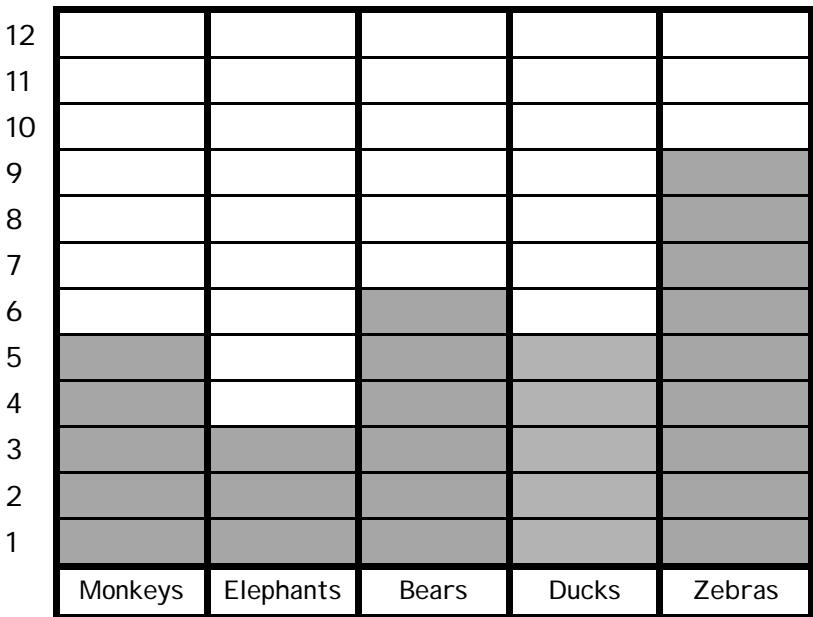
(Answers: Five)

2nd Grade Standard 282.03: Understand the basic concepts of probability.
a. Predict, perform, and record results of simple probability experiments.

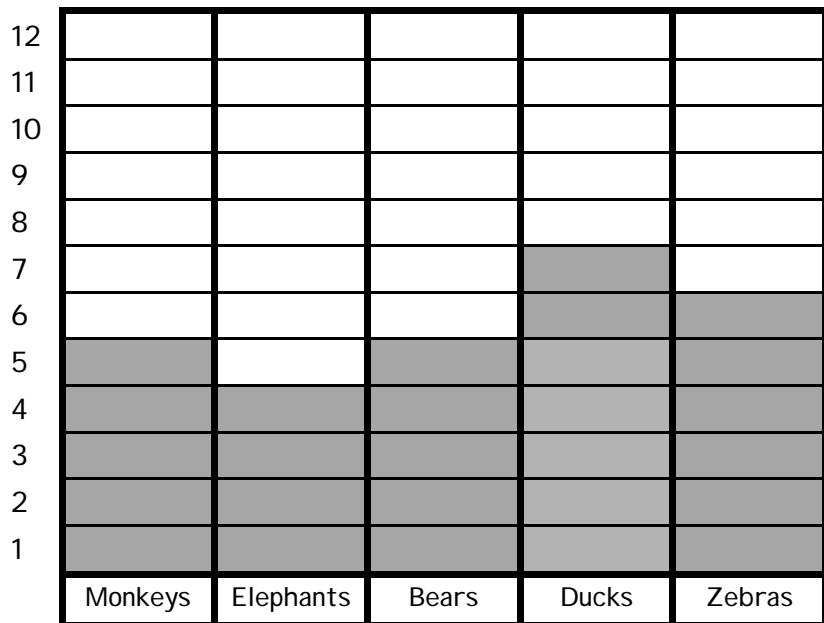
Zoo Animals

	Monkeys	
	Elephants	
	Bears	
	Ducks	
	Zebras	

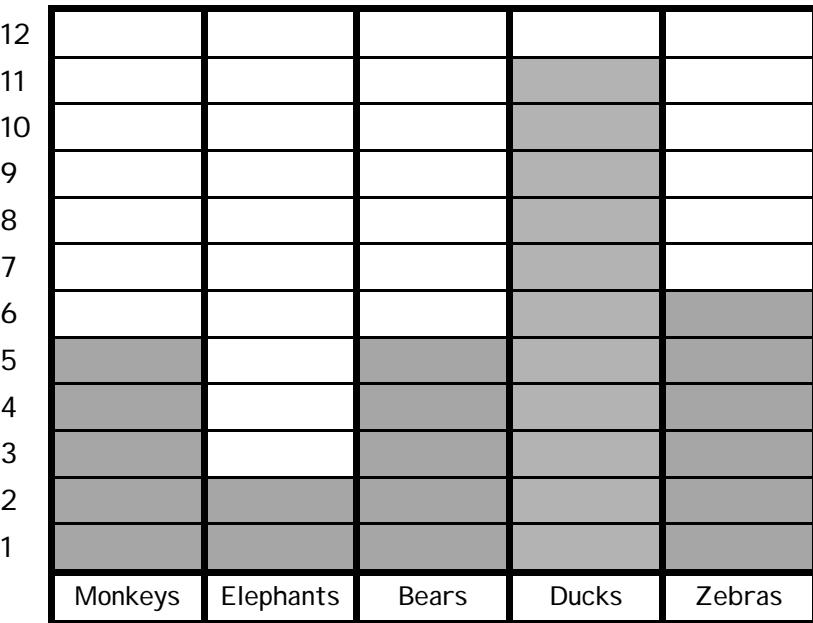
Zoo Animals

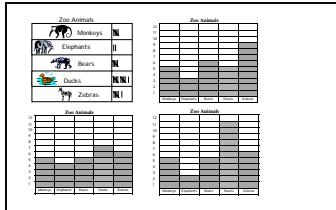


Zoo Animals



Zoo Animals





Teacher shows student page, points to the tally chart and says,

This is a tally chart of animals seen at the zoo. Look carefully at the three graphs. Which of the graphs correctly shows the data or information from the tally chart?

Manipulatives

- None

(Answer: Student indicates graph on bottom right.)

2nd Grade Standard 282.01: Understand data analysis.

a. Interpret information found in simple graphs to answer questions.

2nd Grade Standard 278.03: Apply appropriate technology and models to find solutions to problems.

a. Select appropriate models to represent mathematical ideas.

